



Research Article

# The Economic Crisis in the Mining Sector - Miners Perspective

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## Abstract

The present paper's objective is to assess the perceptions and reactions of the employees' of Jiu Valley mine (Romania) related to the current crisis. For this, an interview protocol as work instrument was applied which contained 17 opinion and factual questions required for the structuring of the research area. The findings illustrate the way the mining industry workers were impacted by the effects of the financial, economical-social and moral crisis occurred after 2007. In fact, the impact overlaid the effects of the labor system's crisis in the Romanian mining sector existing for over 20 years. There were identified those who considered themselves affected by this crisis, the solutions they used or were going to use in the future in order to overcome it, what was the institutional responsible for taking the measures to overcome the crisis. The hypothesis of the paper was confirmed: that those who consider themselves affected by the crisis are more afraid for their jobs than the others. The job - as an economical and social safety element - affords them the psychological comfort that will enable them to overcome the crisis. But in the Romanian mining industry, due to the closure of mines, jobs will be lost as a synergic effect and, especially, as a result of the lack of government involvement.

**Keywords:** crisis, mining sector, mining restructuring, income

## Introduction

The 1972 energy crisis continued with a global resources crisis after 2008 that extended to many other society areas: banking, financial, economical, social, moral. Natural resources of Romania - oil, gases, gold, cooper, led, industrial minerals, wood, coal - were destroyed by both interventions such as: under sales - selling prices being

hugely undervalued, lack of beneficiaries, mass layoffs and non-interventions such as: lack of investments, lack of management, bankruptcy. All these actions, done highly inefficiently, really chaotically, even so some that were supported by feasibility studies lacked a coherent national or sectorial strategy. The result was "a deliberate robbery of country's natural resources" (Stegar & Krausz, 2011) and decline of all

the energetic sector and horizontal industry developed till 1989 as a real cluster.. The mineral resource our paper is looking at is the Romanian coal, a resource with such a negative political and social impact after the 1990's "mineriade" events.

Historically speaking, mining in Valea Jiului was at its peak during the communist period and started to decline after 1990 when the market economy transition begun. Via a massive restructuring / reorganization ongoing process, we witness a dramatic mining sector crisis with perspectives to be terminated by 2018. During the last 25 years, the restructuring process meant that either assets and staff were transferred or some units were liquidated such as: The Valea Jiului Mining complex, 1990; Hard Coal Regia Autonoma, 1991, National Company of Hard Coal - Petrosani - 1998, National Company Of Hard Coal - 2012, The Valea Jiului Mining Liquidation National Society - 2012, The Energetic Complex Hunedoara-2013). Others were stopped (Lonea Pilier Mining, 1994; Câmpu lui Neag and Petrila Sud Mining, 1999; Dâlja Mining, 2003; Valea de Brazi Mining, 2004; Aninoasa Mining, 2006) and some were transformed into independent companies - by outsourcing: (Banat mining, 1998; The IT center - Petroșani, 1998; The administrative Unit of housing and Cantines Valea Jiului, 1998; The Technical and Technological Design Unit, 1998).

The organisational structures still working today to extract, prepare and produce electrical and thermic energy are:

- The Valea Jiului Mining Liquidation National Society - including Petrila, Paroșeni and Uricani minings;
- The Hunedoara Energetic Complex including: Lonea, Livezeni, Vulcan, Lupeni minings, The Mining Salvation Station and the Coal preparation station Valea Jiului.

The staff number working in Valea Jiului mining sector in the period 1990-2015 has constantly decreased up to a dramatic downsize in 1997 (from 55,000 employees in 1990 to 45,647 employees in 1996 and up to 24,258 employees in 1997). Ever since, the decrease continues but at a slower pace

of several hundred of employees per year. Today, there are only 7,034 employees for both the two entities still operational in Valea Jiului but a new lot of 489 workers is expected to be laid out (Bodea, Bozdog & Burdea, 2013).

Ever since its beginning, mining in Valea Jiului faced specific technical issues that turned hard coal mining into a difficult, inefficient, high risk activity with very specific hazards: thin and inclined coal layers, many layers faults, hard steril, metan, water. We could add to these natural hazards the work hazards: explosion risk, physical, visual, hearing over strung, back affection due to high mass manipulation, cave in risk topped by, after 1990, job insecurity (Marica, Irimie & Băleanu, 2015). Miners were forced to deal with top of hard work at work with increased responsibilities, more complex task due to less staffing, higher physical stress and less money to cover their family needs as well as job volatility.

The aim of the present paper is to understand the perceptions and reactions to the crisis of Valea Jiului miners.

### **Research Methodology and Investigation Area**

The present research field phase was conducted at Uricani mine, beginning of 2015 and is part of a larger research work on all the mines in the area. The main research instrument was an interview-protocol elaborated specifically for this purpose. Interview questions were focused on the present economical-financial crisis looking after aspects such as: crisis impact on subjects, their opinion on individual and institutional solutions to overcome the crisis, mining industry perspectives etc.

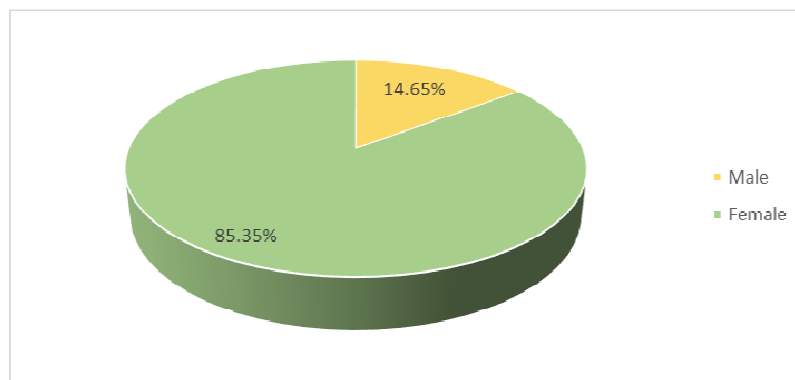
The interview protocol has 17 questions and the research conducted interviews with 389 employees of Uricani mine. The average duration of an interview was of about 20 minutes and implied for some interviews that the person interviewed wrote down their answers themselves while the interviewer was just offering support. This way, we got more subjects to answer (interviews were conducted mostly at the

end of the shifts) and collected valuable information but because of the inherent rush to go home after work some answers were missing when they would fill in by themselves the interview.

The research used both quantitative and qualitative methods (documents analysis, observation, inquiry) and the results were processed primary and secondary using SPSS software and manually.

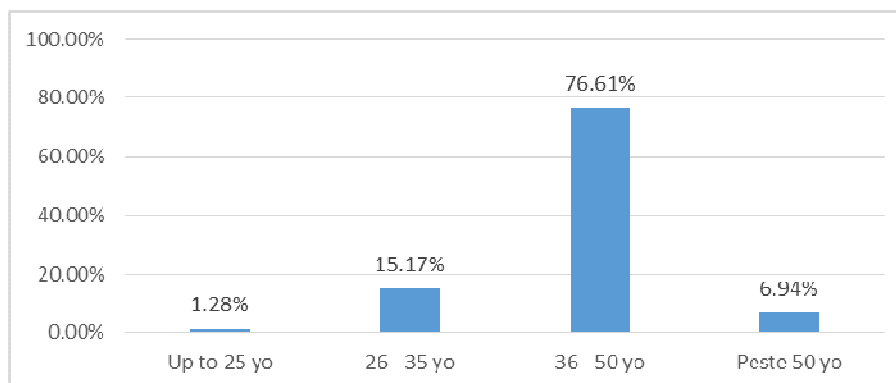
Next we will provide some of the socio-demographic characteristics of the investigated sample-population.

Considering the first criterion "gender", the percentage of male respondents is overwhelming over the female respondents, consistent with the organisation's gender staff structure, as shown in figure 1. From the age point of view, the subjects could be divided in 4 big categories: under 25; between 26 and 35; between 36 and 50 and over 50 years old. The largest category is the one between 36 and 50 years old; it indicates that mining is done with mostly next to retirement employees, young people not being attracted by this field, nor having opportunities to get hired. The structure of the sample population by age is represented in figure 2.



**Figure 1: Respondents' structure - gender criteria**

Source: authors

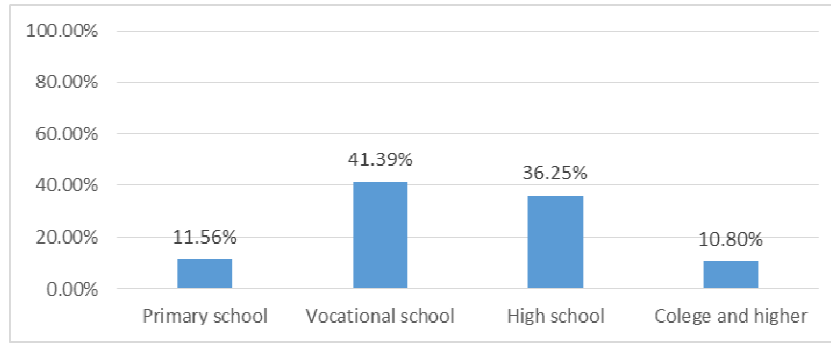


**Figure 2: Respondents' structure - age criteria**

Source: authors

Education criteria: based on their declarations, no uneducated person was among the interview ones, the minimum

declared being as 8th grade graduate. The structure is represented in figure 3.

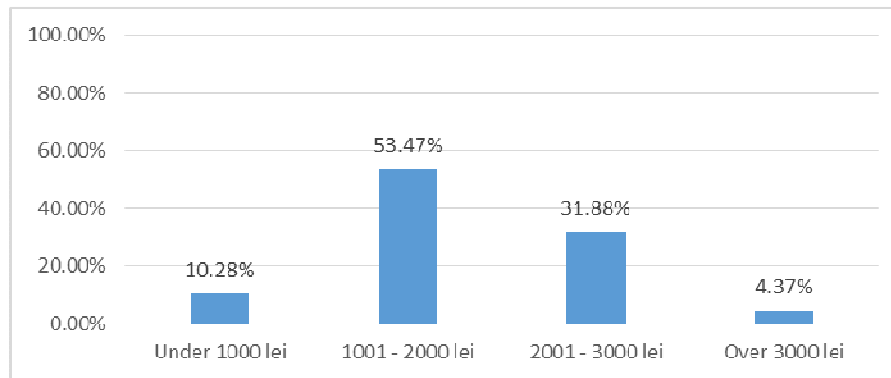


**Figure 3: Education criteria- respondents' structure**

Source: authors

Exacerbated by the economic crisis that is still hurting Romanian economy, problems generated by insufficient income are a major issue. Taking this effect into account two of

our interview questions addressed this aspect. The results of one of them - related to average monthly income per family is shown in figure 4.

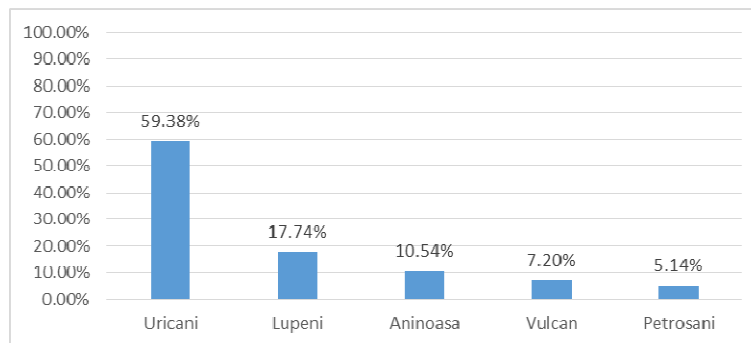


**Figure 4: Average monthly family income structure**

Source: authors

The second question related to income will be addressed in the next part of this paper.

Residence criteria. Most of the respondents, about 60%, live in Uricani. The rest of 40% live in the neighbouring cities. The detailed results are presented below in figure 5.



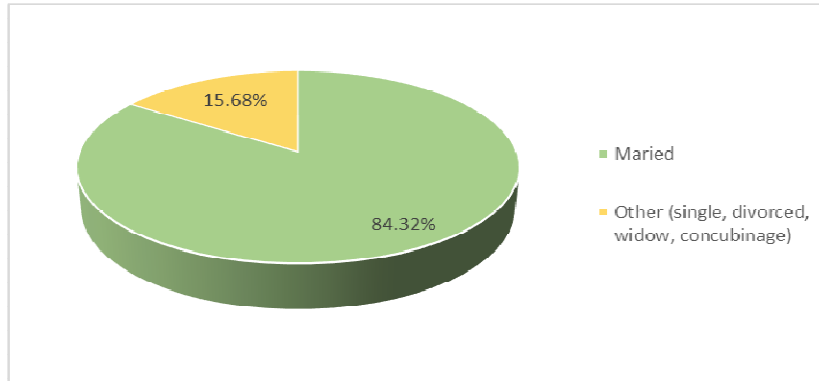
**Figure 5: Residence city - criteria structure**

Source: authors

Housing is mostly represented by privately owned apartments, less than 10% of the respondents have answered that they live in rented apartments or indicated they live with other relatives: parents, in-laws (data obtained from correlation tables). Marital status criteria. An overwhelming majority, over 84% of the respondents are married with a little over 15% single, divorced,

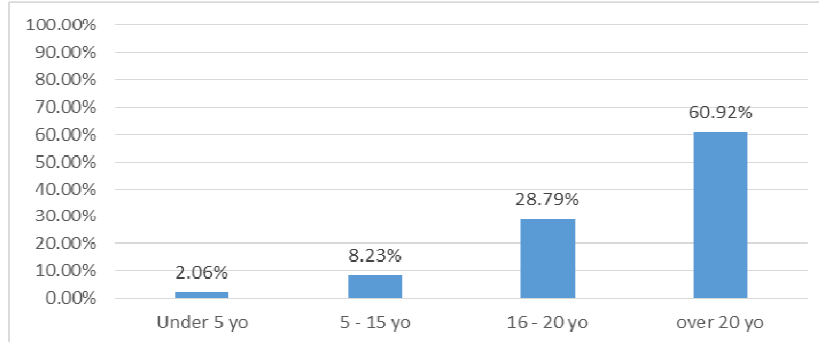
widowhood, in a relationship, as shown below in figure 6.

The last analyzed criterion was the duration of their service measured through the number of years they worked. We could notice that most of them have worked for more than 20 years. Based on the answers, the following structure (figure 7) was obtained:



**Figure 6: Marital status - criteria; respondents' structure**

Source: authors



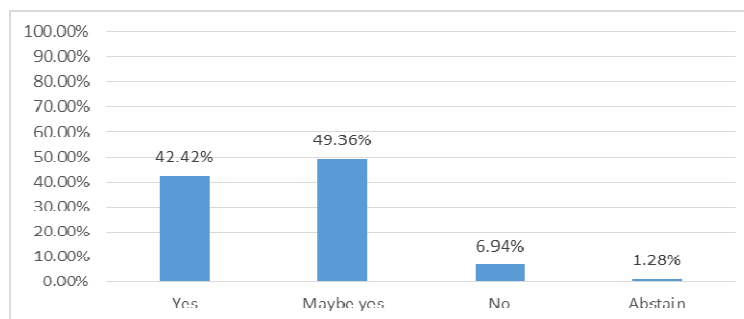
**Figure 7: Length of service criteria- respondents' structure**

Source: authors

### Results Analysis and Data Interpretation

The economic difficulties Romania is struggling to cope with and the unsuccessful attempts of the Romanian Government to overcome it marked directly or indirectly

the whole population. Asked if the existing economical-financial crisis affected their personal and/or family life, most of the respondents answered affirmatively with only a very small percentage not being affected as presented in figure 8.



**Figure 8: The degree to which personal and familial life was affected by the crisis**

Source: authors

According to our data analysis, presented below in table 1, the respondents mostly affected by the crisis are the ones that:

- consider their job at danger due to the intentions of restructuring announced by their employer the National Hard Coal Company short N.H.C.C. (generating not only decrease of income but possibly loss of income);
- have a low income of below 1000 lei/month;
- the pessimists that consider the crisis will continue for 5 years, form now on and over;
- the less educated - only graduates of 8th grade;
- females;
- aged over 50.

**Table 1: Correlation between the question regarding the effects of crisis over personal and familial life with other variables**

Effects of crisis over personal and familial life		Yes, decisively		Mostly yes		No		Not answered/ could not appreciate		TOTAL	
		Abs.	cod(%)	Abs.	cod(%)	Abs.	cod(%)	Abs.	cod(%)	Abs.	cod(%)
<b>Variables</b>		<b>165</b>	<b>42.42</b>	<b>192</b>	<b>49.36</b>	<b>27</b>	<b>6.94</b>	<b>5</b>	<b>1.28</b>	<b>389</b>	<b>100.00</b>
Estimate of crisis duration	One more year	24	46.15	24	46.15	3	5.78	1	1.92	52	=100.00
	another 2-4 years	24	28.24	56	65.88	5	5.88	0	-	85	=100.00
	5 years and more	47	55.95	33	39.29	4	4.76	0	-	84	=100.00
	N.A/could not appreciate	70	41.67	79	47.02	15	8.93	4	2.38	168	=100.00
Frightened by job loss due to reorganization of NHCC	Yes, decisively	49	71.01	19	27.54	0	-	1	1.45	69	=100.00
	Mostly yes	57	37.75	86	56.95	7	4.64	1	0.66	151	=100.00
	Mostly no	26	29.21	48	53.93	14	15.73	1	1.13	89	=100.00
	N.A/could not appreciate	33	41.25	39	48.75	6	7.50	2	2.50	80	=100.00
Search area for a new job	Only in Valea Jiului	57	43.85	62	47.69	10	7.69	1	0.77	130	=100.00
	Anywhere in the country	50	40.65	64	52.03	7	5.69	2	1.63	123	=100.00
	abroad	49	45.37	51	47.22	7	6.48	1	0.93	108	=100.00
	N.A/could not appreciate	9	32.14	15	53.57	3	10.72	1	3.57	28	=100.00

Family income	Less than 1000 lei	25	62.50	13	32.50	2	5.00	0	-	40 =100.00
	1001-2000 lei	95	45.67	96	46.15	15	7.22	2	0.96	208 =100.00
	2001-3000 lei	41	33.06	74	59.68	8	6.45	1	0.81	124 =100.00
	over 3000 lei	4	23.53	9	52.95	2	11.76	2	11.76	17 =100.00
Gender	male	135	40.66	168	50.61	26	7.83	3	0.90	332 =100.00
	female	30	52.63	24	42.10	1	1.76	2	3.51	57 =100.00
Age	Less than 25 and including	2	40.00	1	20.00	1	20.00	1	20.00	5 =100.00
	26-35 years	25	42.37	30	50.85	4	6.78	0	-	59 =100.00
	36-50 years	124	41.61	151	50.67	20	6.71	3	1.01	298 =100.00
	over 50 years	14	51.85	10	37.04	2	7.41	1	3.70	27 =100.00
Education	Middle school	24	53.32	17	37.78	2	4.45	2	4.45	45 =100.00
	Vocational school	67	41.62	83	51.55	11	6.83	0	-	161 =100.00
	High school	56	39.72	71	50.35	11	7.80	3	2.13	141 =100.00
	University/college	18	42.86	21	50.00	3	7.14	0	-	42 =100.00

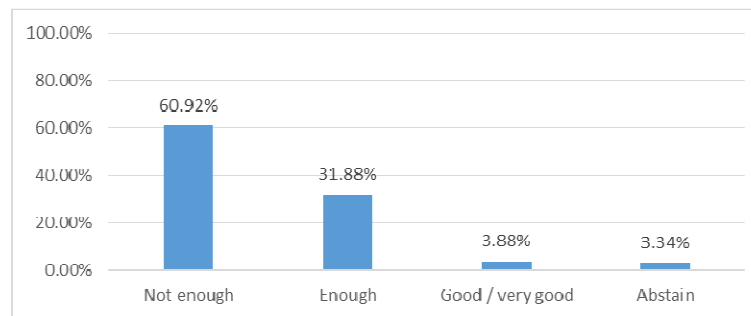
Source: authors

Following the same analysis, we could notice that the respondents affected on a moderate rate by the crisis have the following characteristics:

- consider the crisis will continue for the next 2-4 years;
- feel their job threatened by the reorganisation of N.H.C.C.;
- not sure where they would look for a new job;
- income between 2001-3000 lei/month;

- age between 26-50 years old;
- vocational school graduates;
- males.

Most of the respondents feeling threatened by the crisis have a subjective appreciation of their family income. Therefore, a large number of respondents consider their income insufficient, about a third think their income is barely enough and only a selected few respondents rate it as good/very good. Subjective analysis of average monthly family income is shown below in figure 9.

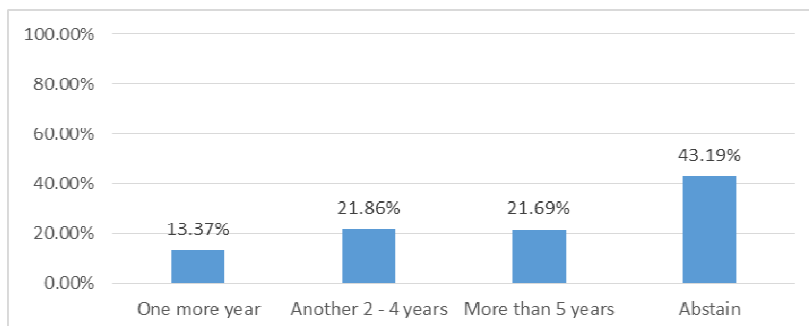


**Figure 9: Subjective analysis of average monthly family income**

Source: authors

More than half of the respondents could not/did not want to make any prediction on when the crisis would end, about 20% indicated over 5 years and 2-4 years and the

rest, more optimistic, estimate the duration of the crisis to one year. The results are presented in figure 10.



**Figure 10: Crisis duration estimate**

Source: authors

Our data analysis correlating the estimations on crisis duration and the other variables considered (see table 2 below) reveals that the ones who consider that the crisis will continue for one more year are the ones:

- who do not feel their job is threatened by the possibility of NHCC reorganization;
- over 50 years old.

**Table 2: Correlation between crisis duration estimate and other variables**

Crisis duration estimate		1 more year		2-4 more years		5 years and more		N.A./could not appreciate		TOTAL	
		Abs.	cod(%)	Abs.	cod(%)	Abs.	cod(%)	Abs.	cod(%)	Abs.	cod(%)
Variables		52	13.37	85	21.85	84	21.59	168	43.19	389	100.00
Estimate of crisis duration	One more year	24	14.55	24	14.55	47	28.48	70	42.42	165	=100.00
	another 2-4 years	24	12.50	56	29.17	33	17.19	79	41.14	192	=100.00
	5 years and more	3	11.11	5	18.52	4	14.81	15	55.56	27	=100.00
	N.A./could not appreciate	1	20.00	0	-	0	-	4	80.00	5	=100.00
Frightened by job loss due to reorganization of NHCC	Yes, decisively	6	8.70	12	17.39	16	23.19	35	50.72	69	=100.00
	Mostly yes	17	11.25	38	25.17	39	5.83	57	37.75	151	=100.00
	Mostly no	19	21.35	19	21.35	16	17.98	35	39.32	89	=100.00
	N.A./could not appreciate	10	20.00	16	20.00	13	16.25	41	51.25	80	=100.00
Search area for a new job	Only in Valea Jiului	17	13.08	39	30.00	20	15.38	54	41.54	130	=100.00
	Anywhere in the country	20	16.26	22	17.89	35	28.45	46	37.40	123	=100.00
	abroad	11	10.18	22	20.37	27	25.00	48	44.45	108	=100.00
	N.A./could not	4	14.29	2	7.14	2	7.14	20	71.43	28	=100.00



	appreciate									
Gender	Male	<b>51</b>	15.36	<b>68</b>	20.48	<b>73</b>	21.99	<b>140</b>	42.17	<b>332</b> =100.00
	female	<b>1</b>	1.75	<b>17</b>	29.82	<b>11</b>	19.30	<b>28</b>	49.13	<b>57</b> =100.00
Age	Less than 25 and including	<b>0</b>	-	<b>0</b>	-	<b>1</b>	20.00	<b>4</b>	80.00	<b>5</b> =100.00
	26-35 years	<b>6</b>	10.17	<b>21</b>	35.59	<b>12</b>	20.34	<b>20</b>	33.90	<b>59</b> =100.00
	36-50 years	<b>40</b>	13.42	<b>55</b>	18.46	<b>67</b>	22.48	<b>136</b>	45.64	<b>298</b> =100.00
	over 50 years	<b>6</b>	22.22	<b>9</b>	33.33	<b>4</b>	14.82	<b>8</b>	29.63	<b>27</b> =100.00
Education	Middle school	<b>7</b>	15.56	<b>9</b>	20.00	<b>9</b>	20.00	<b>20</b>	44.44	<b>45</b> =100.00
	Vocational school	<b>20</b>	12.42	<b>31</b>	19.26	<b>36</b>	22.36	<b>74</b>	45.96	<b>161</b> =100.00
	High school	<b>21</b>	14.89	<b>29</b>	20.57	<b>30</b>	21.28	<b>61</b>	43.26	<b>141</b> =100.00
	University/college	<b>4</b>	9.52	<b>16</b>	38.09	<b>9</b>	21.43	<b>13</b>	30.96	<b>42</b> =100.00

Source: *authors*

The analysis also indicates (see table 2) that the people who consider the crisis will continue for 2-4 more years have following profile:

- they would only look for/accept a new job in Valea Jiului;
- graduated from college/university;
- age between 26-35 years old.

Similarly, the respondents that indicated more than 5 years till the end of the crisis are:

- substantially affected by the existing crisis;
- willing to look for/accept a job anywhere else in Romania or abroad if they would lose the present job.

Also, as presented in table 2, the ones reluctant to answer are people who:

- are not sure whether they would look for/accept another job if they would lose the present one;

- declared they were not affected by the crisis so far;
- aged between 36-50 years old;
- are females.

Analysis of the answers to "what solution are they going to use to overcome crisis effects?" is gaining even more importance due to the large number of respondents that declared they are already affected by the crisis. Each respondent could pick one or more solutions, in total our study recorded 519 choices coming from 389 respondents. More than half are related to having more than one job, about 20% are about using personal savings, 10% count on the help of relatives/friends and/or selling personal goods or having savings, the rest picking other way outs such as: giving up working in the mining field, leaving the country to work abroad, reducing expenses with housing, meals or even revolution to abolish the current political leaders. The exact numbers per category of the 519 choices made are presented below in Table 3.

**Table 3: Solutions indicated by respondents to overcome the crisis (more than one choice /subject)**

Valid	Solutions	Frequency	Percent	Valid Percent	Cumulative Percent
	Working more than one job	268	51.64	51.64	51.64
	Use personal savings	113	21.77	21.77	73.41
	Help from relatives/ friends	47	9.05	9.05	82.46
	Sell properties/ goods	46	8.86	8.86	91.32
	Save - create deposits RON/other currencies	42	8.10	8.10	99.42
	Other ways*	3	0.58	0.58	100.00
	Total choices	519	100.00	100.00	

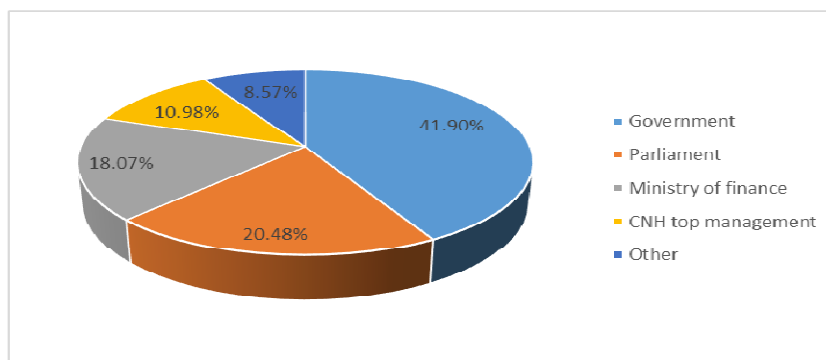
Source: *authors*

\* giving up working in the mining field, leaving country to work abroad, reducing expenses with housing, meals or even revolution to abolish current political leaders

Still on the topic of finding ways to overcome the crisis effects, we asked another question touching the institutional level. Hence, subjects were asked about who should play a major role in taking measures to overcome the crisis. The question had multiple answers, respondents being able to select more than one option. We gathered thus 747 options which means almost 2 for each respondent. It is the highest number we have got during this research; the result

expresses the highest degree of interest of respondents in the topic.

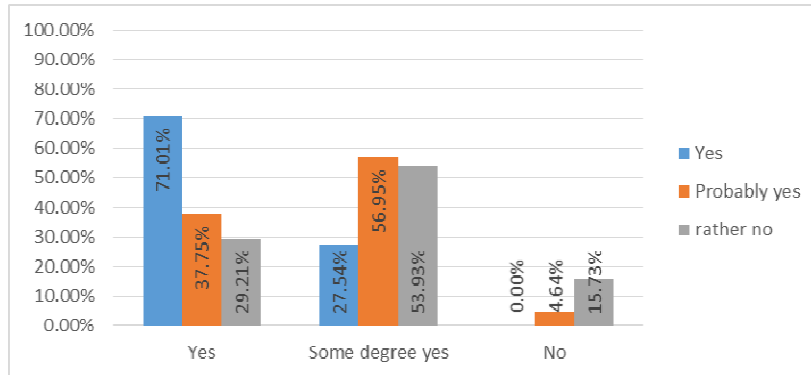
Respondents distributed the responsibility of having to take measures to overcome the crisis to the Government first and then to the Parliament, Economy Ministry, N.H.C.C. management. The rest represented as "other" in figure 11 below is shared by: mining unions, mining company's management, the Presidency, the Romanian people- as entity with decision power:

**Figure 11: Institutions that should play a major role in taking measures to overcome the crisis**

Source: *authors*

At the end of our research, we analyse the hypothesis with which we begun. Based on the gathered data - see correlation table 1- we can state that the hypothesis that started this research is confirmed for the majority of the respondents, in the sense that the ones

highly affected by the crisis are the ones who are very scared that they would lose their jobs. Also, the ones affected on a medium degree consider in an overwhelming ratio that they might lose their jobs - as shown below in figure 12.



**Figure 12: Link between the degree of the respondents affected by the crisis and their fear of losing their jobs**

Source: authors

### Conclusions

The present work was developed around the economical-financial crisis and how it affected the employees of the mining sector in Valea Jiului, specifically Uricani Mining. Face to face talks and data analysis revealed the respondents' worries not only for themselves but mainly for their families and their future. The lack of alternatives is number one worry as people go every day down in the mine knowing it is their only way to feed their children, and this reflects in every other life component influencing their mind, present and future alike.

The primary data analysis and the correlations we have made revealed interesting and sometimes surprising aspects on the subject. By far, the most important aspects are the number of people affected by the crisis and their fear about losing their jobs. Respondents look at the crisis and acknowledge it through the filter of their age, gender, education. The male respondents below 50 would adventure into looking for work anywhere else in the country or abroad, while women over 50 would only look for a job in the area. University graduates would also stay considering they have higher chances to find a new job at the expense of less educated unemployed people. With regard to the initial research hypothesis that was largely confirmed, the results demonstrate that people most affected by the crisis are also people more afraid they would lose their jobs.

The industry restructuring generated new problems so far, such as: fast economical drop of the mining regions, enhancement of social issues, poverty increase. Social problems in the area are mainly the result of a too long specialisation on just one economic activity, the heterogenic population, limited resources availability in the area to sustain further economic progress and slow and low adapting to change. It is obvious that no mining area should be shut off in such short time, hence the need for medium to long term strategies working on correlating as much as possible the industry with the environment strongly affected by it. Any strategy should consider all aspects: economic, social, governance, environment and put at its core people. It should consider involving people in implementing actions, in taking measures together with local authorities, NGOs in the true spirit of consistent and sound development.

### Acknowledgment

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